

Air monitoring and the mobile TAGAs

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A mobile TAGA (Trace Atmospheric Gas Analyzer) is a specialized air monitoring vehicle used primarily for real-time detection of pollutants, tracking down pollution sources, identifying odors and, when necessary, supporting emergencies such as chemical spills and fires. Data obtained by the TAGAs is used for health risk assessments, abatement programs, judicial proceedings and in publications.

Response time and the TAGAs

Although the mobile TAGAs have been, and continue to be, used to support environmental emergencies such as spills and fires, there are limitations on how quickly the units can respond. A great deal depends on where the fire or spill occurs and the travel time involved. The air monitoring equipment can

be set up and quality assurance completed within hours.

During normal work hours, a mobile TAGA may be able to respond in as little as one or two hours, or it may take much longer if the unit is already out doing surveys in another part of the province.

The ministry's planned response time for a mobile unit after normal work hours is within five to six hours of head office being notified of an emergency.

Ministry role in a spill or fire

The ministry is not the first to respond to an environmental spill or fire. Local police, fire and health services are the first to respond to an incident and to implement their emergency plans and procedures, with or without declaring a municipal emergency.

There are only six mobile TAGA 6000 tandem mass spectrometer (MS/MS) units in use across North America and Ontario's Ministry of the Environment operates two of them: the TAGA Pioneer, in use since 1987, and the TAGA Explorer, in use since 1991. The units are housed in 30-foot-long buses and cost the province about \$2.4 million.



Ministry staff set up the TAGA 6000 for air quality sampling.

An emergency response generally escalates, as needed, to involve successively higher levels of government. Decisions for orders and advisories to evacuate or take shelter during emergencies often must be made quickly by municipal authorities, without the benefit of test results from sophisticated air monitoring equipment.

Spills Action Centre (SAC)

To meet its responsibilities related to spills and emergencies, the ministry operates the 24-hour spill reporting and response co-ordinating Spills Action Centre (SAC). The Centre has three levels of field response: Level 1 - District, Level 2 - Regional. Level 3 - Head Office.



Staff analyse air quality samples using TAGA's sophisticated electronic equipment.

The 1997 Plastimet fire – Hamilton

In the case of the 1997 Plastimet fire in Hamilton, for example, all three levels of ministry field response were activated — all within the ministry's planned response standards. TAGA Pioneer arrived at the scene four hours after SAC made its request to head office. TAGA Explorer arrived several hours later.

An earlier arrival by a TAGA unit would not have resulted in an earlier evacuation of residents living near Plastimet. It was more than 24 hours after the first TAGA unit arrived before a decision was made by the Medical Officer of Health for evacuation of 4,000 residents living near the fire. The evacuation call was based on a range of factors, including visual observation of the plume, changing weather and wind conditions, reported respiratory problems and a change in fire-fighting strategy.

Air monitoring measurements for contaminants, such as hydrogen chloride, were all well below the occupational health limits that are often used in emergencies to determine short-term health risks. These results were used in deciding not to evacuate a nearby detention centre and hospital.

With the help of the TAGAs, this was one of the best documented fires in history and will help other jurisdictions when an emergency situation like this arises again.

For more information on the mobile TAGAs, air pollution and emergency response, please contact:

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